

ABSTRACT

The present invention provides a fuel gasification furnace including a gasification chamber (1) for fluidizing a high-temperature fluidizing medium therein to form a gasification chamber fluidized bed having an interface, and for gasifying a fuel in the gasification chamber fluidized bed, a char combustion chamber (2) for fluidizing a high-temperature fluidizing medium therein to form a char combustion chamber fluidized bed having an interface, and for combusting char generated by gasification in the gasification chamber (1) in the char combustion chamber fluidized bed to heat the fluidizing medium, and a first energy recovery device (109) for using gases generated by the gasification chamber (1) as a fuel. The gasification chamber (1) and the char combustion chamber (2) are integrated with each other. The gasification chamber (1) and the char combustion chamber (2) are divided from each other by a first partition wall (15) for preventing gases from flowing therebetween, and which extends vertically upward from the interfaces of the respective fluidized beds. The first partition wall (15) has a first opening (25) provided in a lower portion thereof, and the first opening (25) serves as a communication between the gasification chamber (1) and the char combustion chamber (2), for allowing the fluidizing medium heated in the char combustion chamber (2) to move from the char combustion chamber (2) via the first opening (25) into the gasification chamber (1).